

FIG. 5b

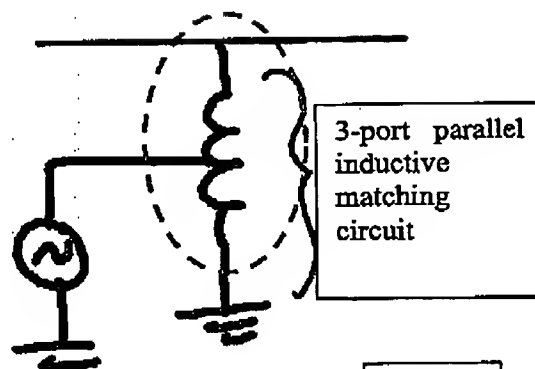


FIG. 1

United States Patent (19)

Suzsada et al.

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(34) ANTENNA DEVICES

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United States Patent (19)**Wolpenczak****(11) Patent Number:** 4,912,482**(49) Date of Patent:** Mar. 27, 1990**(54) ANTENNA****(72) Inventor:** Edward W. Wolpenczak,
Chalfont, United Kingdom**(73) Assignee:** The General Electric Company, p.l.c.,
London, United Kingdom**(21) Appl. No.:** 75,969**(22) Filed:** Jul. 21, 1987**(30) Foreign Application Priority Data**

Jul. 24, 1986 (GB) United Kingdom 250,896

(51) Int. Cl.: H01Q 1/52**(52) U.S. Cl.:** 343/704; 343/712**(53) Field of Search:** 343/703, 704, 712, 713, 714**(56) References Cited****U.S. PATENT DOCUMENTS**2,435,412 12/1948 Brown
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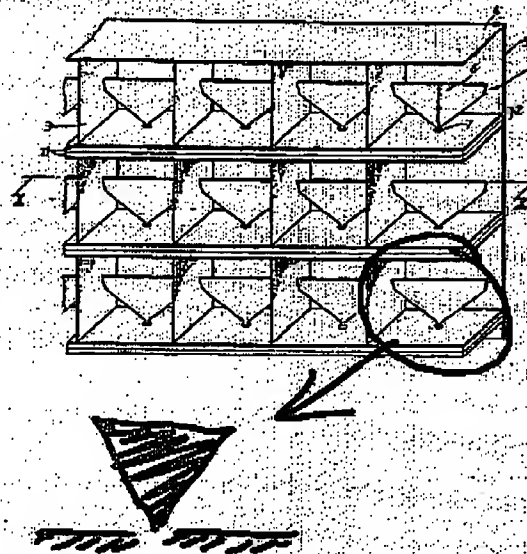
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Primary Examiner: Roll Hill
Assistant Examiner: Margaret L.
Attorney, Agent, or Firm: Spencer & Frank**(57) ABSTRACT**

An antenna includes an array of electrically conductive cells each having one open side and comprising a coupling/receiving element. The conductive cells achieve mutual coupling between elements.

14 Claims, 3 Drawing Sheets

**FIG. 3**

United States Patent**Patent****(1) Patent Number** 4,896,162**(2) Date of Patent** Jan. 23, 1990**(34) CAPACITANCE LOADED MONOPOLE ANTENNA****(73) Inventor** G. D. Farnham, La Habra, Calif.**(79) Assignor** Hughes Aircraft Company, Los Angeles, Calif.**(21) Appl. No.** 25,238**(22) Filed** Mar. 14, 1987**(51) Int. Cl.** H01Q 1/36; H01Q 9/36**(52) U.S. Cl.** 343/748; 343/746**(59) Field of Search** 343/745; 343/746; 343/747; 343/748**(54) References Cited****U.S. PATENT DOCUMENTS**

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Primary Examiner—Joseph E. Carlson, Jr.**Attorney Examiner**—Michael C. Winkler**Attorney Agent or Firm**—Woods & Denson-Lee**(57) ABSTRACT**

An antenna employing a first capacitor formed by a conductive segment disposed above a ground plane and serially connected adjacent capacitors formed over the ground plane. The adjacent capacitors are connected to the ground plane by tuned circuits resulting in additive coupling of the E fields across the first and adjacent capacitors and the prevention of E field shunting.

25 Claims, 3 Drawing Sheets

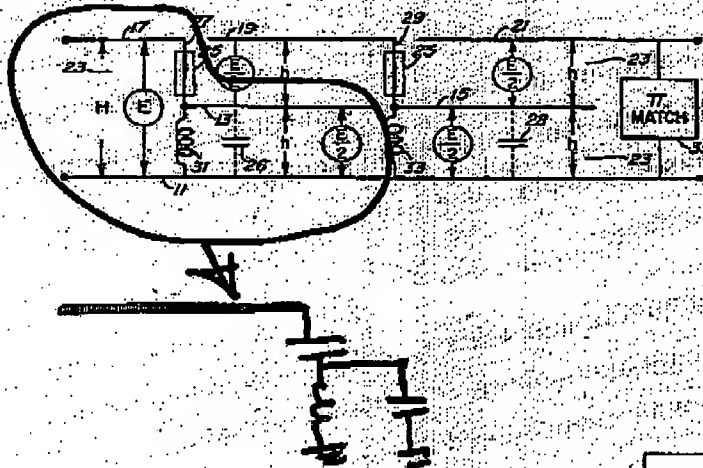


FIG. 4